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FORM PTO-1062

Case Docket No. 634

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

UTILITY PATENT TRANSMITTAL LETTER

Transmitted herewith for filing the patent Application of
Inventor: Daniel Cogswell
For (Title): Four Wheel Drive Manual Hub Lock and Unlock Tool
Enclosed are:

[X] 3 sheets of drawing;
[ ] An assignment of the invention to _____;
[X] A certified copy of a Utility patent application;
[X] An associate power of attorney;
[X] A verified statement to establish small entity status under 37 CFR § 1.9 and 37 CFR § 1.27;
[X} And Information Disclosure Statment Transmittal [substitute for form PTO-1449], along with copies of the IDS citations

The filing fee has been calculated as shown below:

Basic Filing Fee for Small Entity:	$ 345.00
Filing Fee for Additional Claims (over 20)	$ 0.00
Filing Fee for Additional Independent Claims (over 3)	$ 0.00
Surcharge for Multiple Dependent Claim Presented	$ 0.00
TOTAL	**$345.00**

[ ] Please charge my Deposit Account No.07-2380 in the amount of $_____.
A duplicate copy of this sheet is enclosed.
[X] A check in amount of $ 345.00 to cover the filing fee is enclosed.
[X] The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No.07-2380. A duplicate copy of this sheet is enclosed.
[X] Any additional filing fees required under 37 CFR § 1.16.
[X] Any patent application processing fees under 37 CFR § 1.17.
[X] The Commissioner is hereby authorized to charge payment of the following fees during the pendency of this application or credit any overpayment to Deposit Account No.07-2380. A duplicate copy of this sheet is enclosed.
[X] Any patent application processing fees under 37 CFR § 1.17.
[ ] The issue fee set in 37 CFR § 1.18 at or before mailing of the Notice of Allowance, pursuant to 37 CFR § 1.311(b).
[X] Any filing fees under 37 CFR § 1.16 for presentation of extra claims.

John D. Gugliotta, Esq.
Attorney for Applicant(s)

Utility Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Cogswell, Daniel

Serial Nº:

Filed:

Entitled: Four Wheel Drive Manual Hub Lock and Unlock Tool

Docket Nº: 634

Date: January 19, 2000

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(b) - INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.0(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled as above and described in

[X] the specification filed herewith
[ ] application serial number _____, filed _____
[ ] patent no. _____, issued _____

I/We have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9© if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I/We have assigned, granted, conveyed, or licensed or am under obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

[X] no such person, concern, or organization
[ ] persons, concerns or organizations listed below*

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entity. (37 CFR 1.27).

I/We acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

I/We hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

SOLE OR FIRST INVENTOR:

Full Name of First Inventor: Daniel Cogswell

Daniel W. Cogswell — 2-25-2000

Signature of : Daniel Cogswell — Date

SECOND JOINT INVENTOR (IF ANY):

Full Name of :

_____ — _____

Signature of — Date

Utility Patent Application

CONFIDENTIAL INFORMATION

Patent Application based on:	Docket No. 99-634
Inventor:	Daniel William Cogswell
Attorney:	John D. Gugliotta, P.E., Esq. Michael J. Corrigan, Esq.

FOUR WHEEL DRIVE MANUAL HUB LOCK AND UNLOCK TOOL

RELATED APPLICATIONS

The present invention was first described in Disclosure Document Number 461616 filed on September 2, 1999. There are no previously filed, nor currently any co-pending applications, anywhere in the world.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to four-wheel drive trucks and, more particularly, to a four-wheel drive hub locking and unlocking tool.

2. Description of the Related Art

The popularity of off-road and sport utility vehicles is at an all-time high. These vehicles, touted for their ruggedness, durability and ability to travel over a variety of terrains, possess features such as four-wheel drive, high-output engines and heavy-duty suspensions that will withstand the rigors of off-road travel. Especially popular for hunters and outdoors men, these vehicles allow them to reach camping and hunting sites that would otherwise be inaccessible. While most newer vehicles have electric mechanisms to engage and disengage the four-wheel drive systems, there is still a great abundance of vehicles with manual transfer hubs. These hubs must be locked and unlocked manually from outside the vehicle at each of the wheels. While this is not too much of an effort during fair weather conditions, it is a great aggravation during bad weather, which ironically, is when the four-wheel drive system is needed the most. Many times the user must remove gloves to rotate the transfer level subjecting the user to cold temperatures, and possible hand injury from skinned knuckles should the user lose balance while turning the hubs. Accordingly, there exists a need for a means by which manual four-wheel drive hubs can be engaged and disengaged quickly and easily. The development of the four wheel drive manual hub lock and unlock tool fulfills this need.

In the related art, there exists various patents for unlocking tools for hubs for four wheel drive vehicles. However, there does not exist any patents for a hub locking/unlocking hubs for four wheel drive vehicles with an elongated handle and a handgrip like the present invention.

A search of the prior art did not disclose any patents that read directly on the claims of the instant invention; however, the following references were considered related:

U.S. Pat. No.	Inventor	Issue Date
5,908,080	*Bigley et al.*	Jun. 1, 1999
5,520,272	*Ewer et al.*	May 28, 1996
4,061,058	*Douglas*	Dec. 6, 1977
D 357,617	*Morrissette*	Apr. 25, 1995
D 261,606	*La Fargo et al.*	Nov. 3, 1981
5,850,679	*Hoffman*	Dec. 22, 1998
5,797,301	*Huenke*	Aug. 25, 1998
4,620,462	*Parker*	Nov. 4, 1986
4,028,915	*Stahl*	June 4, 1977
D 341,759	*Vasilakis*	Nov. 30, 1993
D 292,963	*Murtaugh*	Dec. 1, 1987

Consequently, a need has been felt for providing an apparatus with an improved handle and a handgrip to improve torque.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide an improved four-wheel drive hub tool which allows manual four-wheel drive hubs to be engaged and disengaged easily.

It is another object of the present invention to provide increased leverage on the four-wheel drive hub tool.

It is another object of the present invention to decrease the time that must be spent in inclement weather engaging and disengaging hubs.

It is yet another object of the present invention to protects the user's hands.

It is yet still another object of the present invention that it can be used with gloves on.

It is another object of the present invention to work with all four-wheel drive vehicles.

Briefly described according to one embodiment of the present invention, the four wheel drive manual hub lock and unlock tool, as its name implies, is an apparatus that aids in the manual locking and unlocking of four-wheel drive hub mechanisms. Two disc shaped plates are connected together with an elongated section of steel rod of a length of approximately six to eight inches. A channel of approximately ½ inch in width is cut in the front surface of one of the discs for receiving the hub locking lever on the four-wheel drive vehicle. A section of a

spongy textured material formed in the shape of a handgrip is wrapped around and secured to the rod section to provide a gripping surface. The extended length of the rod section allows for additional leverage which makes the locking and unlocking of the hub easier. Additionally, with the users hands located away from the hub, there is less chance for hand injury, should the user slip when the hub turns. Also, the user may keep their gloves in inclement weather offering additional protection for hands. The use of the four wheel drive manual hub lock and unlock tool makes the task of locking and unlocking hubs quick, easy and effortless no matter what the weather conditions are, while increasing safety for the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The advantages and features of the present invention will become better understood with reference to the following more detailed description and claims taken in conjunction with the accompanying drawings, in which like elements are identified with like symbols, and in which:

FIG. 1 is a perspective view showing the intended use of the four wheel drive manual hub lock and unlock tool, according to the preferred embodiment of the present invention;

FIG. 2 is a perspective view of a four wheel drive manual hub lock and

unlock tool, according to the preferred embodiment of the present invention;

FIG. 3 is an exploded perspective view of a four wheel drive manual hub lock and unlock tool, according to the preferred embodiment of the present invention;

FIG. 4 is a side view of a four wheel drive manual hub lock and unlock tool, according to the preferred embodiment of the present invention;

FIG. 5 is an end view of a Four wheel drive manual hub lock and unlock tool showing the channel formed in the disc shaped plate for engaging the locking/unlocking lever on a four-wheel drive hub; according to the preferred embodiment of the present invention; and

FIG. 6 is the opposite end view thereof of a four wheel drive manual hub lock and unlock tool; according to the preferred embodiment of the present invention.

LIST OF REFERENCE NUMBERS

5	Four Wheel Drive Vehicle	15a	Ridge
6	User	15b	Channel
10	Four Wheel Drive Manual Hub Lock and Unlock Tool	16	Rod
15	Front Disc	17	Rear Disc
		20	Handgrip

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The best mode for carrying out the invention is presented in terms of its preferred embodiment, herein depicted within the Figures.

1. Detailed Description of the Figures

Referring now to FIG. 1, a four wheel drive manual hub lock and unlock tool 10 is shown, according to the present invention, for use in locking and unlocking the four wheel drive hub on four-wheel drive vehicles 5 and the like. Typically, such vehicles are manually switched from two wheel drive to four wheel drive by twisting the inner lever on both the left and right front wheel hub. Normally, this is done by grasping the lever by hand and turning it. The hub has only two positions. One is for two wheel drive and the other is for four wheel drive. However, with the four wheel drive manual hub lock and unlock tool 10 this process is greatly simplified. A user 6 simply grabs the elongated handle and engages the channel with the lever in the center of the hub and urges the lever into the desired position.

Referring now to Figures 2 and 3, a perspective and exploded perspective view of the four wheel drive manual hub lock and unlock tool 10 is shown. Essentially, the device 10 consists of two discs, front disc 15 and rear disc 17 connected together by an elongated rod 16 to the center of each disc in a perpendicular fashion as shown. Elongated rod 16 acts as a handle between

front disc 15 and rear disc 17. Front disc 15 and rear disc 17 are fabricated from metal and attached to elongated rod 16 by welding or the entire assembly can be formed by metalworking machinery. A channel 15b is formed in the outer surface of front disc 15 for engaging the locking/unlocking lever of a four wheel drive vehicle hub. The size of front disc 15, rear disc 17, and channel 15b are chosen according to the particular make and model of four wheel drive vehicle it is intended for. Many different sizes would have to made available for the various size hubs according to vehicle and wheel hub manufacturer. Referring to FIG. 4, the finished assembly is wrapped by a handgrip 20 made from a slip resistant material such as rubber and formed with a grips that conform to a user's 6 hand. The diameter of elongated rod 16 is of no particular size except that it must at least be large enough so that handgrip 20 can be permanently attached using known methods such as adhesives.

FIG. 5 shows the outer surface of front disc 15 with a channel 15b formed through the center. Channel 15b is wide enough to engage the locking/unlocking lever of a four wheel drive hub. A pair of ridges 15a sit adjacent to channel 15b. A rear view of the four wheel drive manual hub lock and unlock tool 10 is shown in FIG. 6 showing the slightly oversize handgrip 20 on the assembled device 10.

2. Operation of the Preferred Embodiment

In operation, the end of present invention with the specially formed channel is simply placed over the locking/unlocking lever on either the left or right locking/unlocking lever on a four wheel drive hub. The lever is urged into either the locking or unlocking position by grabbing the handle and twisting. The tool is then removed and stored in the vehicle until the next use.

The foregoing description is included to illustrate the operation of the preferred embodiment and is not meant to limit the scope of the invention. The scope of the invention is to be limited only by the following claims.

CLAIMS

What is claimed is:

1. A tool for manual locking and unlocking the four-wheel drive hub on four-wheel drive vehicles, comprised of:

an elongated rod, said elongated rod having a first end and a second end;

a front disc, said front disc attached to said first end of said elongated rod in a perpendicular fashion and having a channel formed in an outer surface of said front disc for engaging the locking and unlocking lever of a four wheel drive vehicle hub;

a rear disc, said rear disc attached to said second end of said elongated rod in a perpendicular fashion and wherein said elongated rod acts as a handle between said first disc and said second disc;

a handgrip, said handgrip being slightly oversized for wrapping around said elongated rod to provide a gripping surface and made from a slip resistant material such as rubber and formed with grips that conform to a user's hand.

2. The tool for manual locking and unlocking the four-wheel drive hub on four-wheel drive vehicles of Claim 1, wherein said front disc, said rear

tool in a clockwise or counter-clockwise direction as appropriate.

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ABSTRACT OF THE DISCLOSURE

The invention is an apparatus that aids in the manual locking and unlocking of four-wheel drive hub mechanisms. Two disc shaped plates are connected together with an elongated section of steel rod of a length of approximately six to eight inches. A channel of approximately ½ inch in width is cut in the front surface of one of the discs for receiving the hub locking lever on the four-wheel drive vehicle. A section of a spongy textured material formed in the shape of a handgrip is wrapped around and secured to the rod section to provide a gripping surface. The extended length of the rod section allows for additional leverage which makes the locking and unlocking of the hub easier.

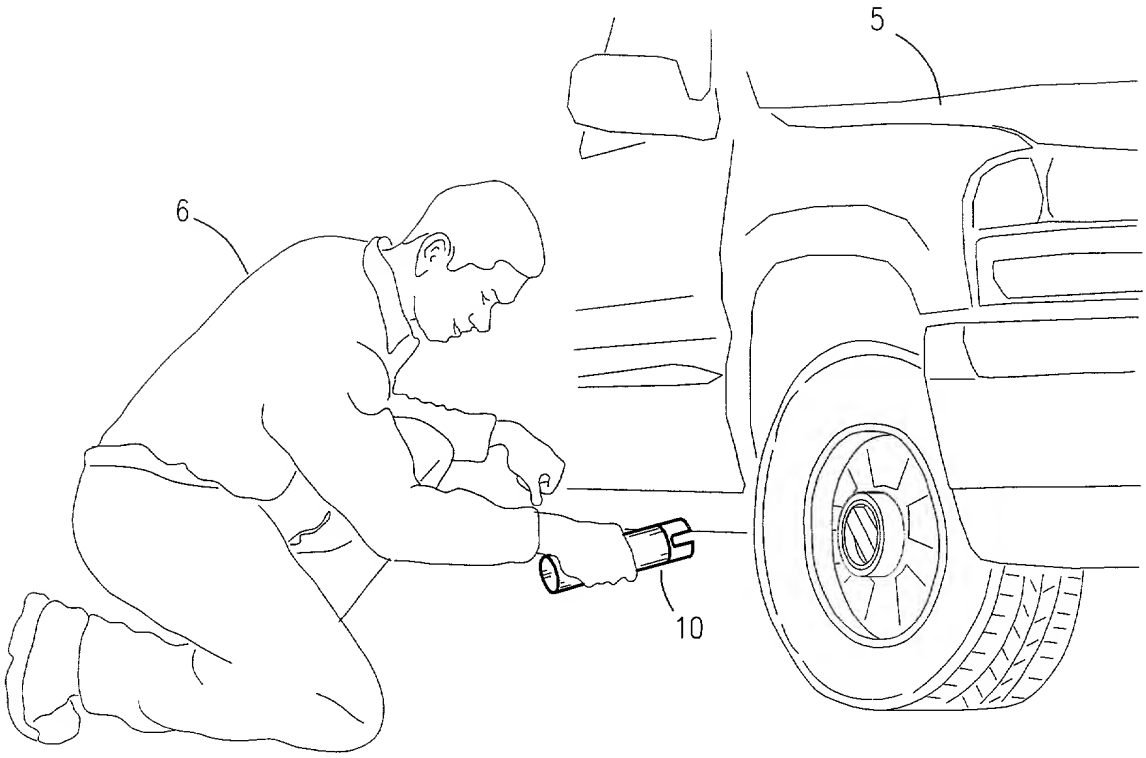

Figure 1

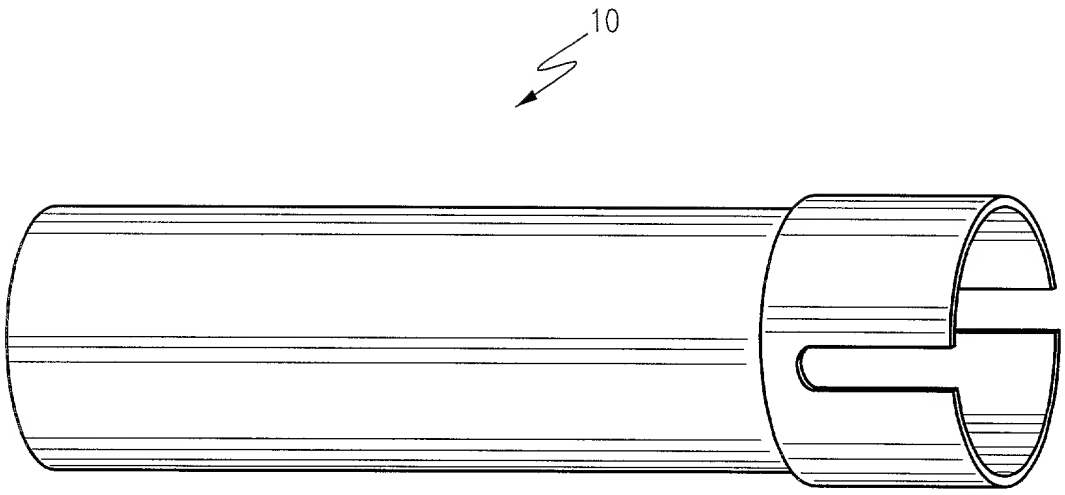

Figure 2

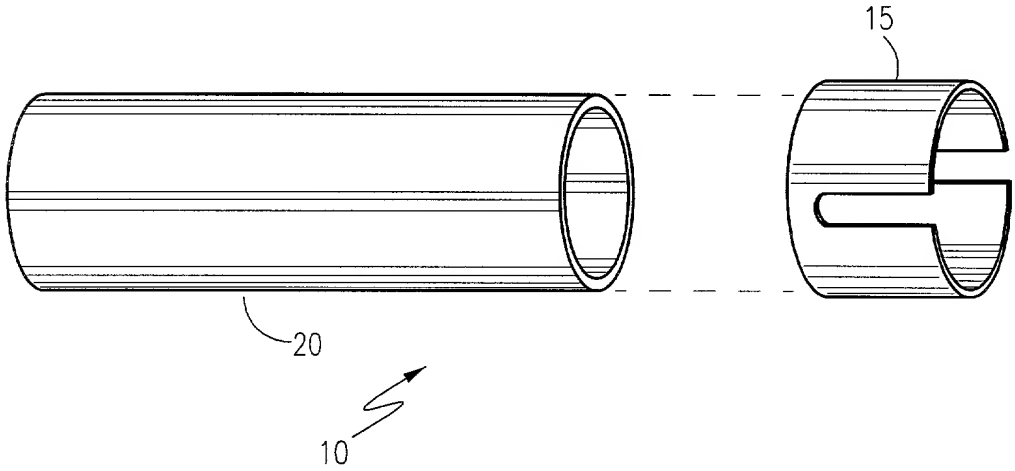

Figure 3

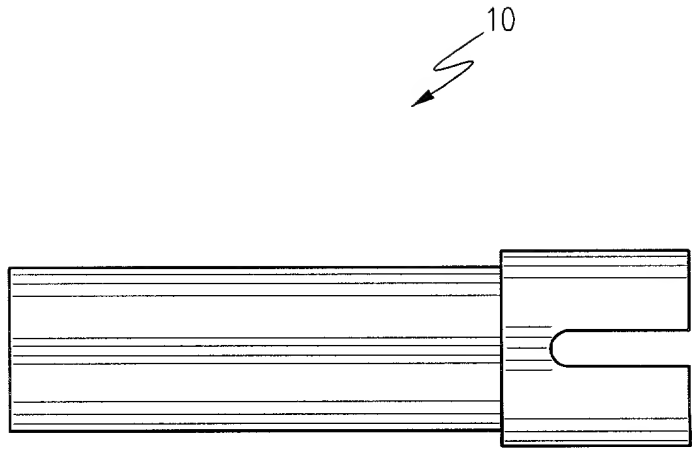

Figure 4

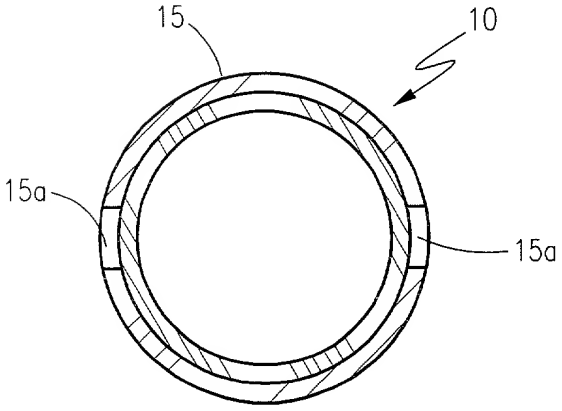

Figure 5

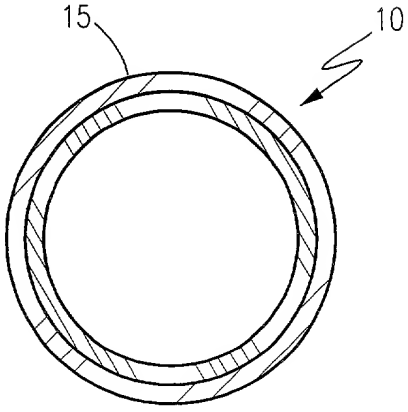

Figure 6

Utility Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Cogswell, Daniel

Serial №:

Filed:

Entitled: Four Wheel Drive Manual Hub Lock and Unlock Tool

Docket №: 634

Date: January 19, 2000

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I/We hereby declare that:

My/Our residence, post office address(es) and citizenship(s) are as stated below next to my/our name(s).

I/We believe I am the original, first and sole inventor of the subject matter which is claimed (if only one name is listed below) or an original, first and joint inventor of the subject matter which is claimed (if plural names are listed below) and for which a patent is sought on the invention entitled **Four Wheel Drive Manual Hub Lock and Unlock Tool,** the specification of which is attached hereto.

I/We further state that I/We do not know and do not believe that the above-named invention has ever been known or used in the United States before my invention thereof, or patented or described in any printed publication in any country before my invention thereof, or more than one year prior to this application, or in public use or on sale in the United States more than one year prior to this application; that the invention has not been patented or made the subject of any inventor's certificate in any country foreign to the United States on an application filed by me or my legal representatives or assigns more than six (6) months prior to this application; and that no application for patent or inventor's certificate on the invention has been filed by me or my representatives or assigns in any country foreign to the United States except as identified below.

I/We hereby state that I/We have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment if applicable.

I/We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I/We hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

None.

I/We hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112. I/We acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

None.

I/We hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I/We hereby appoint the following Patent Attorney, with full power of substitution and revocation, to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith:

John D. Gugliotta, P.E., Esq., Registration No. 36,538
Michael J. Corrigan, Esq., Registration No. 46,440

I/We hereby request that all correspondence be directed to: **Law Offices of John D. Gugliotta, PE, Esq., 202 Delaware Building, 137 South Main Street, Akron, OH 44308** which is also the address of the above-listed attorneys; and that all telephone calls be directed to (330) 253-5678.

SOLE OR FIRST INVENTOR:

Full Name of First Inventor: Daniel Cogswell

Daniel W Cogswell — 2-23-2000

Signature of Daniel Cogswell — Date

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Citizenship of : UNITED STATES

Post Office Address of Daniel Cogswell, 231 Pumpkin Valley Rd.
EIDSON, TN 37731

SECOND JOINT INVENTOR (IF ANY):

Full Name of :

Signature of — Date

Residence of Joint Inventor: EIDSON, TN

Citizenship of Joint Inventor: UNITED STATES

Post Office Address of Joint Inventor: 231 Pumpkin Valley Rd.
EIDSON, TN 37731